

Claims

1. A proton conductor gas sensor wherein water vapor is supplied from a water reservoir to a sensor body having an MEA comprising a proton conductive membrane, a sensing electrode, and a counter electrode, said sensor characterized in that
said water reservoir reserves gel comprising water as a dispersion medium and inorganic fine particles as a dispersoid dispersed in the water.
2. A proton conductor gas sensor according to claim 1, characterized in that
said inorganic fine particles in said gel are silica fine particles.
3. A proton conductor gas sensor according to claim 2, characterized in that
said silica fine particles are made of a silicon compound decomposed in vapor phase.
4. A proton conductor gas sensor according to claim 1, characterized in that
said sensor body having, in addition to said MEA, a metal plate having an opening towards the water reservoir and contacting the MEA directly.
5. A proton conductor gas sensor according to claim 4, characterized in that
said metal plate has concaves and convexes on its surface towards the MEA for gas distribution.
6. A proton conductor gas sensor according to claim 1, characterized by
a cap having an opening for introducing ambient atmosphere towards said MEA from

an opposite side of the MEA to the water reservoir and by

a thin plate between said cap and said MEA, having a diffusion control hole connected to the opening of the cap and having a smaller diameter than that of the opening of the cap.

7. A proton conductor gas sensor according to claim 1, characterized in that

the MEA of the sensor body is sandwiched between a pair of an upper electro-conductive plate and a lower electro-conductive plate, and that

a ring-shaped resinous member, having a pair of upper and lower flanges and a groove in between them, all being inside of the member, holds rims of the upper and lower electro-conductive plates to press the rims by the upper and lower flanges for fixing the electro-conductive plates and the MEA within the ring shaped member.

8. A proton conductor gas sensor wherein water vapor is supplied from a water reservoir to a sensor body having an MEA comprising a proton conductive membrane, a sensing electrode, and a counter electrode, said sensor characterized by

a cap having an opening for introducing ambient atmosphere towards said MEA from an opposite side of the MEA to the water reservoir and by

a thin plate between said cap and said MEA, having a diffusion control hole connected to the opening of the cap and having a smaller diameter than that of the opening of the cap.

9. A proton conductor gas sensor wherein water vapor is supplied from a water reservoir to a sensor body having an MEA comprising a proton conductive membrane, a sensing electrode, and a counter electrode, said sensor characterized in that

the MEA of the sensor body is sandwiched between a pair of an upper electro-conductive plate and a lower electro-conductive plate, and that

a ring-shaped resinous member, having a pair of upper and lower flanges and a groove

in between them, all being inside of the member, holds rims of the upper and lower electro-conductive plates to press the rims by the upper and lower flanges for fixing the electro-conductive plates and the MEA within the ring shaped member.